

## Chapter 9

# What Can People Do with Your Spatial Data? Socio–Ethical Scenarios

**Roba Abbas**

*University of Wollongong, Australia*

**Katina Michael**

*University of Wollongong, Australia*

**M. G. Michael**

*University of Wollongong, Australia*

### ABSTRACT

*Location-Based Services (LBS) provide value-added solutions to users based on location or position information and other contextual data. They enable the collection of GPS data logs or location chronicles, and may be deployed on a range of devices, many of which presently come in the form of commercially available product solutions with corresponding applications. This chapter presents the outcomes of an observational study of LBS users, which was designed to gauge user perspectives in relation to LBS socio-ethical dilemmas. The focus is on the outcomes of a spatial analysis exercise, which resulted in the development of a series of scenarios (in map format) that demonstrate varying LBS usability contexts. The scenarios range across various risk levels, and can be used as further input into consultative practices that are centered on the socio-ethical implications of LBS usage. Additionally, the results of the LBS observational study can be utilized to inform the need for LBS regulation. Future research directions are proposed, allowing for the study to be extended to wider contexts.*

DOI: 10.4018/978-1-5225-1016-1.ch009

## **INTRODUCTION**

Location-based services (LBS) provide value-added solutions to users based on location or position information, and on other contextual data. They enable the collection of GPS data logs or location chronicles, and may be deployed on a range of devices, many of which presently come in the form of commercially available product solutions. These include, but are not limited to, in-car/vehicle data loggers, dedicated handheld or wearable GPS devices, and GPS- or location-enabled smart phones. In considering the socio-ethical (including privacy and security) issues pertaining to LBS usage, it is important to examine user perspectives regarding the technology, and in particular their attitudes regarding location disclosure. This chapter presents a series of socio-ethical scenarios that allow such attitudes to be gauged, thereby spatially reporting on the outcomes of an observational study of LBS users, previously analyzed in Abbas (2010) and Abbas (2011). A summary of this earlier analysis is offered, and a series of spatial maps are put forward as an alternative, visual, representation of the thematic outcomes. Future research directions, such as the regulatory and public policy implications of the study, are discussed.

## **BACKGROUND: WILLINGNESS TO DISCLOSE LOCATION INFORMATION**

This chapter, in essence, focuses on the socio-ethical dilemmas associated with LBS usage, from the perspective of the users themselves. Literature in this domain is primarily focused on location disclosure amongst social relations, such as friends and family, and specifically on the willingness of users to reveal location information to individuals, both within their social circle and extending also to strangers.

Prior ethics and social implications literature address the complexities associated with the themes of control, trust, privacy and security. These complexities arise from the intimate relationships between those themes and their sporadic presentation in relevant scholarship. There are few studies that simultaneously cover all four themes. Specifically, there is a lack of research that covers the *socio-ethical dilemmas* and *usability* related factors of location tracking and monitoring. Whilst previous studies have addressed one or more themes related to control, trust, privacy and security, in many cases they have not done so concurrently and/or explicitly.

Several studies have, however, been conducted that concentrate specifically on the attitudes of users with respect to location information disclosure, monitoring and tracking amongst social relations, which may include *friends*, *parents*, *other family members*, *employers*, and *strangers* (Levin et al. 2008, pp. 81-82), all of whom can be considered “friends” in the social networking environment. A major

30 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/what-can-people-do-with-your-spatial-data/164310](http://www.igi-global.com/chapter/what-can-people-do-with-your-spatial-data/164310)

## Related Content

---

### An MPEG-DASH Methodology for QoE-Aware Web3D Streaming

Kostas Kapetanakis, Markos Zampoglou, Athanasios G. Malamos, Spyros Panagiotakis and Emmanuel Maravelakis (2014). *International Journal of Wireless Networks and Broadband Technologies* (pp. 1-20).

[www.irma-international.org/article/an-mpeg-dash-methodology-for-qoe-aware-web3d-streaming/125873](http://www.irma-international.org/article/an-mpeg-dash-methodology-for-qoe-aware-web3d-streaming/125873)

### Cultural Adaption of Hypermedia: A Contemporary State of the Art of Industrial Practice and Improvements by Multi-Trees

Judith Dödtmann and Ralf Wagner (2012). *International Journal of Wireless Networks and Broadband Technologies* (pp. 41-50).

[www.irma-international.org/article/cultural-adaption-of-hypermedia/94553](http://www.irma-international.org/article/cultural-adaption-of-hypermedia/94553)

### IoT Big Data Security, Privacy and Challenges Related to Smart Grid

Kimmi Kumari and M. Mrunalini (2019). *International Journal of Wireless Networks and Broadband Technologies* (pp. 1-10).

[www.irma-international.org/article/iot-big-data-security-privacy-and-challenges-related-to-smart-grid/243657](http://www.irma-international.org/article/iot-big-data-security-privacy-and-challenges-related-to-smart-grid/243657)

### A Study of Research Trends and Issues in Wireless Ad Hoc Networks

Noman Islam and Zubair A. Shaikh (2014). *Handbook of Research on Progressive Trends in Wireless Communications and Networking* (pp. 208-248).

[www.irma-international.org/chapter/a-study-of-research-trends-and-issues-in-wireless-ad-hoc-networks/97846](http://www.irma-international.org/chapter/a-study-of-research-trends-and-issues-in-wireless-ad-hoc-networks/97846)

### Data Broadcast Management in Wireless Communication: An Emerging Research Area

Seema Verma, Rakhee Kulshrestha and Savita Kumari (2012). *Wireless Technologies: Concepts, Methodologies, Tools and Applications* (pp. 929-943).

[www.irma-international.org/chapter/data-broadcast-management-wireless-communication/58824](http://www.irma-international.org/chapter/data-broadcast-management-wireless-communication/58824)